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CACTUS AND SUCCULENT JOURNAL

Of the Cactus And Succulent Society
Of America
Vol. I SEPTEMBER, 1929 No. 3

Mrs. Dent Hayes Robert's Garden, Coronado
See Page 5

Journal of the CACTUS & SUCCULENT SOCIETY of America

A monthly magazine devoted exclusively to Cacti and Succulents for the dissemination of knowledge and the recording of hitherto unpublished data in order that the culture and the study of these particular plants may attain the popularity which is justly theirs. "The Cactaceae," by N. L. Britton and J. N. Rose, has been adopted by this Journal for purposes of identification.

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Published by
THE CACTUS AND SUCCULENT SOCIETY OF AMERICA

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CACTUS DWELLERS

By WRIGHT M. PIERCE
Claremont, California, July 20, 1929

At the break of day this spring morning was none too warm on the Mohave. Nearby scattered clumps of Cholla, Opuntia parryi, glistened silvery in the dim light against the green of the Creosote bush, while in the distance groups of Opuntia ramosissima appeared like dark shadows on the landscape. From the mysterious recesses of rocky ridges the faint hoot of a sleepy Desert Horned Owl and the sharp yelp of a marading coyote came through the clear desert air. Nearer to our camp and from the top of a large Cholla, an anxious Cactus Wren scolded at our intrusion. It is about this never too abundant bird and one that is so intimately associated with cactus that I shall tell you.

Both Opuntia parryi of the desert and Opuntia whipplei of the Pacific Slope serve as ideal nesting sites for the Cactus Wren, one of the distinctive birds of the southwest. Even though dwelling in such a thorny environment he appears not to have become "stuck up." The sharp cactus needles do not impale him and he lives satisfied with his thorny home. One of our wariest birds he usually darts away, giving one only a momentary glimpse as he seeks cover in some friendly thicket or cactus bush farther away. The scientist has burdened our California and Arizona Cactus Wrens with the name, Heleodytes brunneicapillus couesi.

This brownish fellow is of towhee size, with striped upperparts and heavily black spotted underparts and a dark reddish brown crown. This is our largest wren and W. L. Dawson has aptly described his note as a "rich yodelling, fading to a murmur or with a metallic finish," the latter especially when disturbed.

The nest of this large wren is a well built, firmly constructed cylinder of grasses, weeds, and weed stems, about a foot long and from six to ten inches through, with a small tunnel opening entrance at one end. The lining is of feathers, rabbit fur, soft weed fibres and hair, all of which makes a wonderfully soft, warm bed for its three to six (usually four or five) pale salmon colored eggs, which are often dotted with orange cinnamon, russet or mikado brown, generally heavier

marked about the larger end. Thus these eggs are usually of rare beauty.

For nesting sites this wren prefers the Chollas, however I have found this bird also using the flat leaved Opuntia occidentalis, Opuntia ramosissima, Joshua tree, Mesquite and other thorny bushes. And if its natural nesting homes are destroyed, it sometimes takes to cottonwoods, apricot trees or other shrubs or trees that are handy.

The cactus homes of these wrens no doubt protest them well from hungry coyotes, sneaking foxes and cats and to some extent from snakes and rats. However, it is true that cactus will not altogether save them from molestation by the small desert mammals and reptiles, even though the cactus thorns tend to discourage these enemies. Likely for further protection and perhaps to confuse their enemies, these birds have the habit of building many so called "dummy or cock nests," which are also used as roosting places throughout the year. Even though these dummy nests are not so well constructed and are poorly lined, they serve as excellent protection from the cold during desert nights, for especially in winter though the days are often hot there, the nights are the coldest in the west.

Without doubt the settling up of the country has caused a marked decrease in the numbers of this interesting wren, by destroying their natural nesting sites, food and cover. However, there is some evidence and hope that they are partially adjusting themselves to changing conditions, as I have found them nesting in an apricot tree near Claremont, in a cottonwood in the Imperial Valley, and another has been reported as using a telephone pole near Azusa. I fail to see the similarity between these sites and cacti but the birds probably took the best that was left. Such is the result of our wild life and native flora with the settling up of the waste land and the only hope for the birds is for them to adapt themselves to changing conditions. With these changes every wild cactus must go and let me here digress for a moment to remark that probably more cactus is destroyed in California and Arizona each year in clearing land and building roads than all that the collectors take in a decade. And such plants are gone while those taken by the legitimate cactus enthusiast are saved and cared for to be admired for their beauty and to continue for years to give joy to those interested, both to the scientist who studies them and to the casual person who takes pleasure in their esthetic beauty.

The natural food of the Cactus Wren is spiders, wasps, beetles, grasshoppers, and scale insects. Thus we classify this bird as wholly beneficial.

However, you cactus devotees do not imagine that every nest you discover in cactus belongs to a Cactus Wren. For the flat leaved cactus, the Chollas, and Opuntia ramosissima furnish ideal nesting sites for birds such as Desert Sparrow, Costa Hummingbird, Leconte and Sage Thrash-

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SILVERSKIN

By JAMES WEST, *San Rafael*

The accompanying illustration might pardonably be mistaken for a conception of abstract form, chiseled out of marble by Brancusi or some other modernist. The strange objects represent, however, only another one of the many remarkable adaptive growth-forms among the Mesembrieae. It would be difficult to conceive succulence in a leaf, reduction of surface in relation to volume, carried much farther than here. The surface is smoother than an eggshell, of a white faintly tinged with gray-green. Striking as is the appearance of the plants, it may easily be imagined how inconspicuous they would be among the white quartz rock which is their natural habitat, another instance of protective mimicry in the family.

These plants belong to Argyroderma, another one of the new genera segregated from Mesembrianthemum by N. E. Brown. Argyroderma (gr.: argyros—silver, derma—skin) is characterized by: leaves usually 2-4 to a growth, less than twice as long as broad, ovate to oblong, smooth, white, dotless; flowers sessile, or nearly so, with stamens more or less bent down into the calyx-tube, and a single, circular or oval stigma, this latter character being unique in Mesembrianthemum, shared only with the closely related genus Roodia N. E. Br. The fruit is 10-24-celled, the cells nearly closed by a large tubercle and usually without cell-wings.

Some of the species have been known and in cultivation for generations, having been first collected by Fr. Masson and in 1774 sent to Kew. Aiton published the description of Mesembrianthemum testiculare in the Hortus Kewensis in 1789. His description is so short and incomplete* that to this day there exists considerable doubt which of the several closely related species was Aiton's plant.

Haworth, one of the first and greatest students of succulent plants, knew and described several distinct varieties of M. testiculare, with white, yellow and red flowers respectively (Miscellania naturalia 1803). In 1821 (Revisiones plantarum succulentarum) he set up his section Semiovata, with two species, M. testiculare and M. octophyllum, the latter now including some of his former varieties of M. testiculare. M. testiculare is figured by Sims in Curtis' Botanical Magazine, t. 1573, as a plant with yellow, rather short-petalled flowers and six medium-sized leaves, very flat above with sharply defined edges. One of the red-flowered forms is figured (as M. testiculatum) by Jacquin in Fragmenta botanica (1800) t. 22, showing a plant with two large leaves with rounded edges and a flower with long narrow loosely hanging petals. This plant to judge from the illustration, strikingly resembles one of Dr. Marloth's collecting, distributed by de Laet, which was described as A. Delaetii n. sp. (Z. f. S. 1928 p. 180) and A.D. var. purpureum (Z. f. S. 1928 p. 294) by C. A. Maass The abnormally long, narrow petals, spread out loosely like a fringe over the widely spreading leaves are very characteristic and quite unlike the typical Argyroderma-flower with its short, broad, stifflyheld petals; they have much resemblance to the flowers of Punctillaria and Pleiospilos. The leaves also, with their swollen-looking rounded edges, the under-side projecting beyond the upper in a "chin-like protuberance in the manner of Pleiospilos Bolusii, are very different from the sharply-cut edges of A. testiculare. Dr. Schwantes, who has also grown de Laet's plant,

Seedling of Argyroderma testiculare (Ait.) N. E. Br.

*"M. foliis quatuor decussatis supra planis. Short white-leav'd Fig Marygold." This might apply equally well to any of the species.

identifies it with Haworth's M. t. v. roseum and calls it Argyroderma roseum.

This is obviously distinct from A. t. v. roseum N. E. Br. as figured in Gar. Chr. 10. Apr. 1926, which has short wide petals and ascending leaves with sharp edges. N. E. Brown describes the following forms:

A. testiculare type with moderately broad short white petals.

A. t. var. luteum with similar yellow petals.

A. t. var. roseum, just mentioned.

A. t. var. Pearsonii, flowers short-pedicelled, outside magenta, inside deep yellow with red stripe.

However, color is apparently in this genus a less reliable character than is usually the case in the Mesembrieae, as it seems established that seeds from one capsule will produce plants with white, yellow and red-purple flowers. This unusual variability is already remarked upon by Sims.

Very evidently the genus needs considerable further study, before a definite list of species and varieties can be made. At present there exists considerable disagreement among the authorities as to their standing.

The prime need is for an exhaustive series of plant-material representing all known forms. Here is an interesting task for some enthusiast willing to assemble such a collection. So far, material of any kind of Argyroderma may be said to be practically non-existent in this country. Our illustration is of seedlings of what is presumably typical A. testiculare. Nothing further can be said about them, until they flower, which may not be for some time; a century and a quarter ago Jacquin observed that of 200 seedlings only 5 survived after 8 years and had not then produced a single flower; that was in Vienna; let us hope that we may have better luck with them under the California sun!

The center of distribution for the Argyrodermata is the Van Rhynsdorp Division, Cape Province.

Any reader of these lines, at home or abroad, who happens to know of sources of supply for seed or plants, especially of variant forms, would confer a favor on the writer by getting into communication with him.

Follows a tentative list of species and varieties culled from the literature. The synonymy, particularly as regards the collation of species and varieties of the older writers, Aiton, Jacquin and Haworth, with those of Brown, Schwantes and Maass, none of them agreeing with one another, is given without any guarantee of authenticity.

Argyroderma Braunsii Schw. (Cheiridopsis Braunsii Schw.)

A. crateriforme (L. Bolus) N. E. Br.

A. Delaetii Maass fig. Z. f. S. 1928 p. 180.

A. D. var. purpureum Maass (M. testiculatum Jacq. (?) A. roseum Schw.) fig. Z. f. S. 1928 p. 294; Jacq. Frag. t. 12.

A. duale N. E. Br.

A. necopinum N. E. Br. (M. testiculare var. gamma Haw. Misc. Haw. Syn.; M. octophyllum var. beta Haw. Rev.)

A. Schlechteri Schw.

A. subalbum N. E. Br. (M. octophyllum, type, Haw., acc. to Schwantes)

A. testiculare (Ait.) N. E. Br. (M. testiculatum Jacq., A. amoenum Schw. ("non M. testiculare Ait.": Schwantes) fig. Gar. Chr. Ap. 10, 1926.

A. t. var. roseum N. E. Br. (M. octophyllum var. gamma Haw. Rev.) fig. Gar. Chr. l. c.

A. t. var. luteum N. E. Br. (M. octophyllum Haw.) fig. Bot. Mag. t. 1573.

A. t. var. Pearsonii N. E. Br. (A. Pearsonii Schw.)

Literature

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A. Berger, Mesembrianthemen und Portulacaceen, Stuttgart 1908. p. 275.

N. E. Brown, in Gardeners Chronicle, Lond. 1922 p. 93; ibid. 10. Ap. 1926.

N. E. Brown, in Journ. Linnaean Soc. Lond. Vol. XLV t. 9 fig. 38-39.

Adrian Haworth, Observations on the Genus Mesembryanthemum, Lond. 1795, vol. 2, p. 133.

Adrian Haworth, Miscellania Naturalia, Lond. 1812, p. 24.

Adrian Haworth, Synopsis Plantarum Succulentarum, Lond. 1812 p. 205.

Adrian Haworth, Revisiones Plantarum Succulentarum, Lond. 1821, p. 85.

T. N. Leslie, in So. Afr. Journ. of Nat. Hist. VI, 2, 1927.

C. A. Maass, in Zeitschrift fuer Sukkulentenkunde 1928 p. 180.

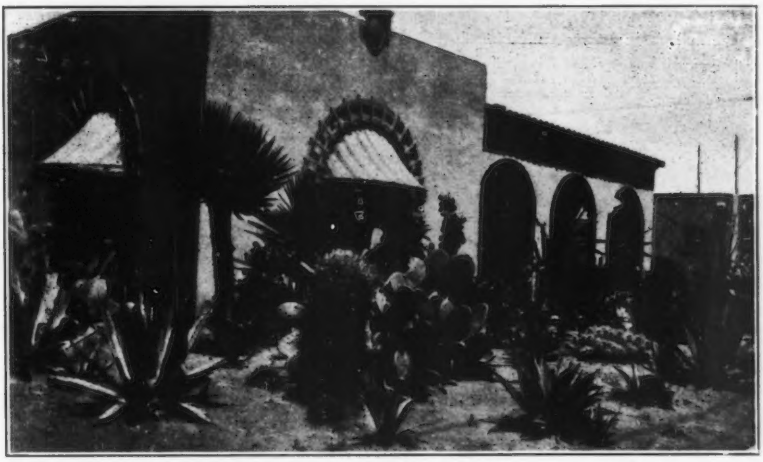
C. A. Maass, ibid. p. 294.

G. Schwantes, in Monatsschrift d. D. Kakteengesellschaft 1929, p. 27.

Sims in Curtis' Botanical Magazine t. 1573.

Sonder in Flora Capensis II, 394.

Willdenow, Species Plantarum, Berlin 1797, vol. 2. p. 1026.



Cactus Garden of Mrs. M. B. Palmer

Coronado's Cactus and Succulent Garden

By Dr. Grace P. Nickerson

Sharply contrasting with the ever verdant gardens and lawns of beautiful Coronado is the interesting and well arranged cactus and succulent garden of Mrs. M. B. Palmer of 811 Tenth St. of that miniature city.

This garden seems to be considered one of the "sights" of the Island and as it is located not far distant from the famous Hotel Coronado, many curious visitors come to view the reported "unusual place." Perhaps it is the first garden of the kind ever seen by many of them. Explanations of surprise and pleasure followed by varied discussions often reach the ears of Mrs. Palmer.

The well designed house of Spanish architecture forms a fitting background for this garden which is placed in front and on either side of the house. Near the end of the portico is a large healthy looking Ocotillo reaching almost to the roof. In the springtime this shrub must be of great interest to eastern tourists. Equally interesting when in bloom must be a large species of Tuna cactus growing near the opposite corner of the house. At the present time it is fairly loaded with its queer looking fruit.

Elsewhere about this garden, well spaced as to distance, size and color are several species of the Basilares series, namely Opuntia treleasei, O. basilaris, O. microdasys, O. macrocalyx and O. rufida. The cylindropuntia series are represented by Opuntia subulata, O. alcahes and O. prolifera. Other cacti enhancing the interest of this garden are the Opuntia erinacea, Nopalea dejecta, Ferocactus acanthodes, F. viridescens, Echinocereus mojavensis, E. rigidissimus.

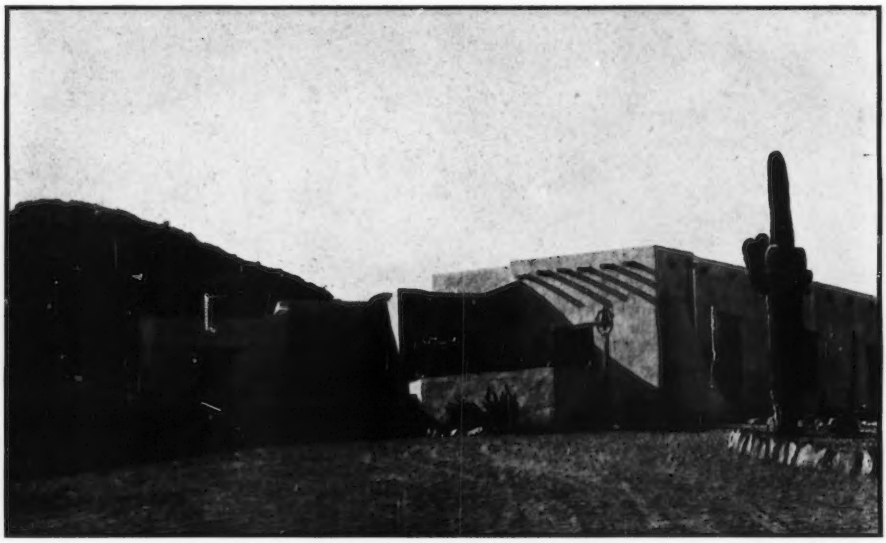
Scattered among the cacti are clusters of Aloe saponaria, an occasional Aloe brevifolia, Agave Americana, Yucca treculeana, Y. elata, Y. whipplei, Sedum adolphii and a large specimen of Portulacaria.

Mrs. Palmer is much interested in her cacti and succulents and gladly welcomes people of kindred interests to see her gardens.

Another more extensive, equally interesting and quite different cactus and succulent garden of Coronado is the garden of Mrs. Dent Hayes Robert, 1000 Glorietta Blvd.

The unique house is Spanish mission type, built about a good sized patio within which are a number of the less hardy tropical plants. Surrounding the house is a real desert garden which gives one a sensation of surprise when turning from it you find you are only a few hundred feet from the water of the bay. It was flower time when I visited this garden. Most noticeable were the beautiful shimmering Dasylirion glancophyllum with their rich green leaves three feet or more in length spreading in all directions and their erect yellow flower stems fifteen to eighteen feet tall pointing skyward.

An Agave sisalana was bravely holding erect an immense flower scape, at least twenty feet tall, which had burst forth into many beautiful blos-



Adobe type of architecture

soms. Other yuccas were scattered here and there —Yucca elata, Y. schottii, Y. baccata, Y. whipplei, Y. filamentosa, each had a place. Aloe elata, A. virens, A. brevifolia, A. depressa, A. saponaria, Sedums, Crassulas, Cotyledons, each contributed their share of color and interest to the gardens as a whole.

Cacti are not an outstanding feature of this garden. Neverthhless they are there. Good sized Cephalocereus bearing many buds almost ready to burst into bloom. Small rockeries break the monotony of the level grounds. These are filled with Echinocerei, Echinocacti, Ferocacti, Mammillarias and Coryphanthas, all having representative members in this garden.

Agaves, Aloes, and Opuntias with Mission in background.

Your Secretary's Column

By R. E. WILLIS

Our membership now lacks less than 10 of being 400. Let's all work for a 500 mark by the first of January and remember that membership in an organization is not like making a fortune, the last hundred is the hardest.

When you come to the show to be held Aug. 29, 30 and 31 at the Rust Nurseries, 352 Glenarm St., Pasadena, bring one friend at least who will want to join, someone will be there to take his membership and of couse he will also want to subscribe to the Journal. Membership will be $1.00 to January 1, 1930 and Journal will be $2.00 for one year.

When you read this if you haven't as yet made your entry for the show, do so at once, as it will be necessary to notify the Reservation Committee so they can arrange space for you. Do not phone this information—a card or a letter to Mrs. Margaret Bonynge, 103 North Mansfield Ave., Los Angeles, will be your only expense.

You may take your exhibit to the show place any time after 8 A. M., August 26 and all plants must be in place before 10:30 A. M., August 29th. All plants will be carefully guarded until the end of the show. All exhibitors will be given a season ticket for the price of a single admission—50c.

Britton and Rose, the Cactaceae, will be the authority of correct names of all cacti. These books may be consulted in the Public Library. Elsewhere in the Journal will be found information on classifications, prizes, etc.

The July meeting was held Aug. 4, at the residence of Mr. C. H. Hamilton in Flintridge, Calif. There were nearly 200 present. Mr. Willis Rowe of San Fernando, Calif., President of the National Herpetological Society, gave an extremely interesting and educational lecture, illustrated by stereopticon slides, on the subject of Reptiles of Arid Regions. This lecture was of such nature that it would interest every lover of the desert and you can look forward to an article by Mr. Rowe on this subject.

The reports of the various committees were received with a great deal of interest. Dr. Willanne Breden, Transportation Committee, reported a great rush of business from those desiring transportation but a grave lack of interest by those having cars. Please try and be generous next time and call Dr. Breden and offer to take one or two with you. There are a great many members, whose husbands do not belong to the Society and are not interested in our lovely spines (cactus spines, not vertebrae) and do not drive a car but want very much to attend the meetings.

Speaking of spines, I wonder if we have any chiropractor members—it seems as though we should have a number.

The prizes at the last meeting were won by, out of Los Angeles County members, Miss L. H. Koenig of San Francisco, a fine plant of Sempervivum arachnoideum. First choice, Miss Helen Sieffert of Los Angeles same as above; second choice, Mr. H. P. Brochille of Los Angeles, an Eryngium agavafolima; third choice, Mr. Cecil Hart of Montebello, one Sempervivum hirtum. All these plants were donated by Mr. Hamilton.

Mrs. Lee Chamberlain of 401 N. Vermont avenue, is preparing an exhibit for the show that will surprise you. It will demonstrate how you can have a lovely cactus garden in a very small space such as a bungalow court or in a front entrance to an apartment house or roof of a flat.

Mr. G. A. Frick, Business Manager of the Journal and Society Librarian, spent the week of August 10th in San Francisco. We surmise he was adding to his collection of rare plants for his exhibit in the coming show.

We have entries in the show from one plant to a space of 200 square feet.

One of the national news reel studios will take a picture of the exhibits which will be shown all over the U. S. A. You had better get your pet plant in the picture.

Mr. R. C. Pickering, Pickering Bldg., Kansas City, Mo., an authority on Euphorbias, wishes to enlarge his collection. Mr. Pickering would be glad to hear from anyone who has plants to sell or exchange.

Send in to the secretary any news items you have about cacti or cactus fans.

Mr. R. F. Kado of the Wilshire Rockcrafts and Cactus Gardens, 2014 Wilshire Blvd., Santa Monica, has presented the society with a miniature Painted Desert 2 ft. x 3 ft., complete with mountains, desert sands and cacti. This will be auctioned off to the highest bidder at the coming Cacti Show.

THE FIRST ANNUAL CACTUS SHOW

AUGUST 29, 30, 31

Edward H. Rust Nurseries, 352 E. Glenarm St., Pasadena, Cal.

Hours: Noon to 9:30 p. m. the 29th, 10 a. m. to 9:30 p. m. 30th and 31st

The artistic success of the Cactus Show is assured! Our distinguished fellow member, Mr. William Hertrich, General Manager of the Huntington Foundation, is enthusiastically preparing a great exhibit. Mr. Hertrich has given the best years of his life to the collection and study of rare plants, and is responsible for the finest collection in all the Americas. You will be able to study some of his choicest cacti in a more leisurely way than is possible at San Marino.

If Mrs. Rooksby shows her usual skill at staging succulents, her exhibit alone will be worth a visit to the show.

Mr. Wallis of Artesia has a surprise for all Cactus lovers, while Mr. Frick and his boys are staying up nights to astonish us.

Mr. Secretary Willis isn't saying much but a certain determined look in his eye, when Cactus seedlings are mentioned, indicates a great deal to the wiseacre.

No one is afraid of Mr. Wegener because he is the monarch of all he surveys in the fields of Selenicereus, Harrisia and Epiphyllum, but look out for Mrs. Wegener, as suspicions are afloat of her invading a certain field.

I am continually asked "What about Mr. Mendel?"—that's a secret.

You will notice by the Premium List that there are a great many classes, so if you only have half a dozen plants, one of them may win a prize in its class—Do not be afraid if your collection is small, it may bring you a Prize or a Ribbon—The date is August 29, 30, 31.

And Oh, the sweepstakes cups! Mrs. Sherman Hoyt, the San Fernando Chamber of Commerce, and Arts and Architecture Magazine are not giving these magnificent cups for fun. The winning exhibits must be of general interest. By the way, we expect Mrs. Sherman Hoyt to shortly write her views on Conservation of the Cacti.

PREMIUM LIST

A1 SWEEPSTAKES. *To be awarded on the last day of the show. Points for most interest to fanciers.*

1st. Cup presented by Mrs. Sherman Hoyt.
2nd. Cup presented by San Fernando Chamber of Commerce.
3rd. Cup presented by Arts and Architecture Magazine.

A2 BEST STAGED COLLECTION. *Large or small.*

1st. The Pasadena Star News Cup.
2nd. Blue ribbon.

A3 BEST AND RAREST PLANT SHOWN.

Stephen Vavra Gold Prize, $15.

A4 LARGEST COLLECTION OF CORRECTLY NAMED CACTI.

President's Cup.

A5 LARGEST COLLECTION OF NAMED SUCCULENTS.

1st. Cup presented by Mrs. Susanna Bixby Bryant of Santa Ana.
2 other prizes.

A6 LARGEST COLLECTION OF SUPHORBIA.

1st. Cup presented by Mary C. Ware of San Francisco.
2 other prizes.

A7 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE. *Amateur. Must be over two feet and under six.*

Cup presented by Frank G. Kenne of San Francisco.

A8 BEST MINIATURE CACTUS AND SUCCULENT LANDSCAPE. *Professional. Must be over two feet and under six.*

Handsome garden smoking set from the Marbelite Corporation, Los Angeles.

A9 BEST CACTUS BOWL. *Amateur.*
Fern donated by Mr. Fred Hills, Hills Nursery, Echo Park.

A10 BEST CACTUS BOWL. *Professional.*
Cup presented by Edward Mendel of Los Angeles.

A11 BEST CACTUS BOWL. *Junior (under 18).*
$5 Cash Prize presented by Wm. N. Duane of Santa Barbara.

A12 BEST COLLECTIION OF OPUNTIAS.
Cup presented by Alain C. White of Litchfield, Conn.

A13 BEST COLLECTION OF CRISTATES.
$2 Cash Prize presented by Otto Roller, New Jersey.

A14 BEST COLLECTION OF GRAFTED PLANTS.
$1 Cash Prize presented by Mrs. M. C. Gilbert, Pasadena.

A15 BEST COLLECTION AND DEMONSTRATION OF SEEDLING GROWING.
One Seed pan of 50 small seedlings, 25 varieties of cacti; all rare plants correctly named, presented by Secy. R. E. Willis.

A16 BEST COLLECTION OF ZYGOCACTUS AND SCHLUMBERGERA.
Ferocactus visnaga, 12 inch plant presented by William Hertrich.

A17 BEST COLLECTION OF MAMMILLARIA, NEOMAMMILLARIA AND CORYPHANTHAS.
Pair of cactus vases presented by Dr. Grace P. Nickerson.

A18 BEST COLLECTION OF ECHINOCACTOIDS.
Echinocactus grusonii, beautiful 18 inch plant presented by William Hertrich of the Huntington Foundation.

A19 FINEST SPECIMEN ASTROPHYTUM.
Two lovely and rare plants presented by Rare Plant Martin, Montebello.

A20 LARGEST COLLECTION OF NAMED EPIPHYLLUMS.
Two Euphorbias presented by Secy. R. E. Willis.

A21-100 BEST COLLECTION OF ANY OTHER GENUS OF CACTI.
Cup presented by Winsel Gibbs Seed Co., 243 So. Main St., Los Angeles.

B1-50 BEST SPECIMEN OF ANY OTHER GENUS OF SUCCULENTS.
12 in. Cactus Mexican bowl, planted, presented by McCabe Cactus Gardens, San Diego.
Fine specimen of Living Rock, presented by McCabe Cactus Gardens.
Fine specimen of Lophophora williamsii, presented by McCabe Cactus Gardens.

C1 BEST COLLECTION OF FREAKS.
Trichocereus schickendantzii, large clump presented by William Hertrich.

C2 BEST COMEDY LAYOUT. *Must show horticultural skill.*
Medal presented by Better Flowers Magazine.

D1 BEST WOMAN'S CLUB EXHIBIT.
1st. Five lovely pieces of pottery presented by A. J. Bauer Pottery Co., 415 Ave. 33, Los Angeles.
2nd. Sterling silver cactus spoons presented by Mrs. Lee Chamberlain.

D2 BEST JUNIOR. (*Under 18*).
A very fine and rare plant presented by W. L. Maechtlin.

E BEST EXHIBIT OF CACTUS GROWING AND HANDLING AIDS, SPECIAL TOOLS, ETC.
Pincenectia tuberculata presented by San Fernando Nursery, San Fernando.

F BEST COLLECTION OF PLANTS WITH REGARDS TO FANCY POTS OR CONTAINERS.
Doryanthes palmeri, in tub, presented by Jannoch's Nursery, Pasadena.

G COLLECTION OF INSECT PESTS AND PARASITES, INIMICAL MOULDS AND FUNGI.

H BEST DISPLAY OF METHODS OF PROPAGATION OF CACTI AND SUCCULENTS.
Cup presented by Pasadena Post, Pasadena.
Many others received too late for publication in this issue.

EUPHORBIAS

By G. A. FRICK

Sitting on a bench at the general store in Oracle, Arizona, with two other cowboys some 25 years ago, an old Apache Indian character known in that locality as "Burro," approached us with a rattlesnake in his hand, and in his limited and poor English gave us to understand that for twenty-five cents he would allow the snake to bite him. I showed him the quarter-dollar and informed him it was time to start the performance. He then showed us the fangs in the snake's mouth, to prove to us it was to be legitimate entertainment. After rolling up his trousers, he proceeded to aggravate the snake into striking him in the calf of the leg.

At this time I did not know what a Euphorbia was, and like most people, I was under the impression that they were a milk weed. Growing all over the greater part of this section of Arizona, in small prostrate, matlike mounds, there is a species of Euphorbia, the name of which I do not know; it has a very small grayish round leaf, with a tiny white insignificant flower that has no attraction to the wayfarer. The Mexican call it Yerba deVibora (Snake Herb). "Burro" gathered a liberal handful of these plants and mashed them between two stones, thus making a poultice of it which he bound around the fresh wound, then quietly walked into the general store with apparently no injurious effect from so poisonous a viper. He purchased twenty-five cents worth of jelly beans, which he took to his squaw, manifesting delight in his ability to regale her with such a delicacy.

I asked a doctor if the juice of this plant was an antiseptic, and he said that there was no medical value to the placing of the Euphorbia poultice on the wound, and to his mind it must have been a trick. I have seen the great Houdini and Professor Hermann perform, and paid a greater price to watch them work, and if old "Burro" did trick us I can only say he is the greatest magician I have ever seen do his stuff.

Not being satisfied with the doctor's answer, I made a search of all the available books at the library for a better knowledge of the valuable properties possessed by the genus Euphorbia. Here is what I have been able to ascertain: The acrid resin, commonly known as Gum Euphorbium is the produce of certain undetermined species, the principles of which are probably E. antiquorum, E. canariensis and E. officinarum. It is a dangerous cathartic emetic and rubefacient, and produces severe inflammation of the nostrils, if those who powder it, do not guard themselves from the dust. It is produced from the wounded stems and collected in leather bags. In India it is said to be mixed with the oil pressed from the seeds Sessamum Orientale, and employed externally for rheumatic affection, and internally for cases of obstinate constipation. The Arabs make up violent diarretic pills, by rubbing over the juice of the species E. antiquorum with flour; their camels, however, are said to eat the branches of the plant when cooked. The juice of the species E. cereiformis, E. heptagona and E.

The Red Diamond Rattler

Continued on page 17

The Genus Pereskiopsis

By Dr. Arthur D. Houghton

The plants of this genus are very readily distinguished from those of Pereskia by their sessile (without stalks) flowers and fruits, while the flowers of Pereskia always have stalks. Another marked difference lies in the fact that Pereskias have no glochids, while all species of Pereskiopsis have glochids. In general all plants of this genus are similar in appearance to the Pereskias, hence the name *opsis* meaning resembling. They are natives of Tropical Mexico and Guatemala. The possession of broad, flat, succulent leaves separates them from the rest of the Opuntia tribe. The leaves of the rest of the tribe including the genera Pterocactus, Nopalea, Tacinga, Maihuenia, Opuntia and Grusonia are subulate or cylindric.

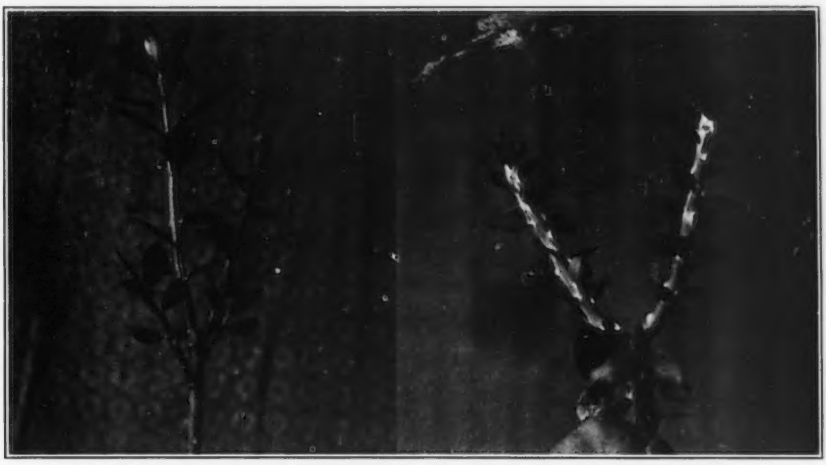
Pereskiopsis velutina is a compact bush with weak and spreading branches about five feet high. Old stems have reddish brown bark. The young branches are green and stick out nearly at right angles to the old stem; these are covered with a velvety pubescence (covered with fine down). The areoles bear long white hairs, several short spines and some glochids. The leaves are elliptic to ovate-elliptic, from one-half inch to two inches long, and from one-third of an inch to one inch wide, sharp tipped and sometimes being almost pointed at both ends; they are dull green, more or less velvety above and below, and of a brighter green when young. The flowers occur on second year branches; the egg-shaped ovary has large leaves and areoles like those of the stem; the flower bud is pointed, the outer sepals are green or deep red; the petals bright yellow. It is found around Queretaro, Mexico, where it is called cola de diablo.

The pubescence of P. velutina and P. diguetii enables you to tell them at once from all other species of Pereskiopsis, because in the others the ovaries, leaves and stems are all glabrous (smooth).

P. diguetii differs from P. velutina in its wider, more abruptly pointed leaves and in its greater height. It is found in hedges around Guadalajara and Oaxaca, where it is known as Tasajillo and Alfilerillo.

P. opuntiaeflora, P. rotundifolia, P. chapistle and P. porteri have, at least some of their leaves not much longer than broad, but P. opuntiaeflora has no leaves on its fruit; its leaves are mucronate with a sudden sharp tip, its spines when present are solitary, three times as long as the leaves; flowers are reddish and yellow, with two rows of petals; the areoles of the ovary are filled with glochids. The existence of this species is in doubt. Since being illustrated by De Candolle it has not again been found.

P. rotundifolia, P. chapistle and P. porteri all have leaves on their ovaries, but P. rotundifolia has orbicular (nearly round) apiculate (terminating in a little point) leaves, which distinguish it from P. chapistle which has egg-shaped or el-



Left: Pereskiopsis spathulata; Right: Pereskiopsis diguetii grafted on Opuntia.

liptic leaves which taper to a point at both ends. Again P. rotundifolia and P. chapistle, with their white areoles with few or no glochids can be easily told from P. porteri with its dark areoles filled with numerous brown glochids. P. rotundifolia is another lure for the cactus hunter described in 1828 by De Candolle and apparently from Oaxaca, Mexico, it has not again been discovered and not known to collections.

P. chapistle from Oaxaca is a branching shrub twelve to fourteen feet high with single long (2 inches) white, very stout spines, with fleshy leaves, nearly two inches long, which remain a long time on the plant; has yellow flowers and red fruit.

P. porteri from Sinaloa, Mexico, is widely distributed in collections. The author received a specimen of this plant from the well known botanist and collector, Mrs. Katherine Brandegee, collected by her about 1900 in the southern part of Lower California. The stems are stout and woody, branching, over an inch in diameter; it grows about four feet high; the old areoles have three to eight stout spines, up to two inches long; on old trunks the areoles often have fifteen to twenty spines; the branches at first green, usually short, spineless or with one or two brown spines, later developing many brown glochids; the leaves are sessile about one inch long, fleshy, obovate (egg-shaped with the broadest end uppermost); the flowers about two inches across with few yellow petals; fruit joint-like, oblong, two and one-half inches long, orange colored, with large areoles, bearing brown glochids, and with usually only one seed.

P. spathulata, P. pititache, P. aquosa and P. kellermanii have leaves some of which are twice or more as long as broad. P. spathulata as the name indicates has spatulate leaves, it comes from Mexico and grows about six feet high; has few branches, which are glaucescent (having something of a bluish hoary appearance), deflexed (bent downward); the leaves are thick, green, one to two and one-half inches long; the areoles are far apart, woolly, hairy when young; spines one to two, white, one inch long; glochids brown, borne in the upper part of the areoles; flowers red; seeds white.

P. pititache, from Mexico has oblong to obovate leaves, which are pale green and glaucous (hoary, grey surface) nearly two inches long, pale green, thin, acute or bluntish at the apex, narrowed at the base; stems rather low, with few branches, a light brownish bark which flakes off; one to four needle-shaped spines to an areole and a small cluster of yellow glochids on the main trunk; on the branches, even when old, there is a single needle-shaped spine from each areole with no glochids; the young branches are slender and green with small areoles, black in the center with long white hairs around their margins but no spines.

P. aquosa from Guadalajara, Mexico, has bright green shining leaves, not glaucous as in P. pititache; they are nearly elliptic, acute, narrowed at the base; is a low shrub with glabrous, glaucous green branches; the young shoots have long white hairs on the areoles; spines single, white, sticking straight out from the stem, with few yellow glochids; the flowers are yellow with outer petal blotched with red; fruit pear-shaped, yellowish green up to two inches long and one inch in diameter.

P. kellermanii, from Guatemala, whose many brown glochids distinguish it from P. aquosa, which has but few yellow ones is a weak herbaceous, clambering shrub, with stems about seventeen feet long, three-quarters of an inch in diameter; its second year branches are usually at right angles with the cherry-red bark; the old stem has sometimes none or only one needle-shaped brown spine and many brown glochids; the young branches are green, fleshy, with circular areoles with long white hairs and brown glochids and often several needle-shaped brown spines; on old stems, the spines are sometimes stout, solitary nearly black, an inch long; leaves very variable in shape; the fruit is red, glabrous, two and one-half inches long with large areoles filled with brown glochids; the flowers are unknown. The facts that the fruit bears leaves, that the seeds are covered with matted hairs, and its Trapichite, Guatemala, habitat (all the rest of the genus being Mexican) may cause this plant to be transferred to the Pereskias or even require a special genus to be created for it. I have not decided whether to consider this species a link between Pereskia and Pereskiopsis or as a remote ancestral relative. If any reader can furnish me living material of this species it will assist me in solving an important problem. The culture is about the same as for Pereskia. Pereskiopsis does well grafted on many of the Platyopuntias; see illustration.

The Marbelite Corporation of America, makers of the classic lamp posts which adorn our best boulevards, are giving as a prize a Marbelite garden smoking set—Class A8. The old fashioned cast iron lamp posts always rusty looking and in need of paint should never be used in parks nor gardens, or indeed on ornamental boulevards. The new product Marbelite is not cast, but centri-fugalized in a lathe, never looks dirty and lasts forever.

AUSTRALIA WAGES WAR ON CACTUS

By E. MORTENSEN, *Pearsall, Texas*

No matter how useful or decorative a plant may be considered in one region, it is often a weed in another section and may even be cursed as a plague and fought with every means available. Nature when let alone usually keeps a balance between her forces and plants seldom get out of control in their native habitat, but when man begins to move them into strange countries where the particular forces that control them do not exist they often become pests. A very striking example of this is the introduction of cactus into Australia. In its native habitat, the Americas, cactus is seldom considered a pest and is more frequently looked upon as a desirable plant to have in times of drought for livestock. It is widely cultivated in Mexico and in Central and South American countries, both for stock feed and for fruit. But when some of these species were taken to Australia what pests they did become! Ranchmen were driven out of their holdings, farmers had to leave their lands and it was a difficult matter to keep highways clear of the foreign plague. At the present time it is considered the greatest scientific problem that confronts the government forces in Australia.

No one knows exactly why or how cacti were introduced to Australia. It is possible that some of them were introduced with a view to cultivating the cochineal bug which at that time was a flourishing industry in some parts of North America. However, any peoples moving to a new country will carry plants and seeds with them from their former homes and this is more probably the way they became introduced. At any rate, they were brought into Australia within the past hundred years and since that time have rendered valueless for agricultural pursuits over 60,000,000 acres of the great ranching areas of Queensland and New South Wales. In 1920, the spread alone was estimated at over 1,000,000 acres annually.

In Australia most of the spread is by seed. The fruits are relished by livestock when ripe and cattle, sheep, emus and other animals carry the seeds to new territory, where a new area of infestation is begun. Rains and floods also help to carry joints of the various Opuntias downstream and start them on new lands. Livestock movements might be controlled but the birds cannot, so the spread by seed goes on.

The pest cacti of Australia are all of the genus Opuntia and are known commonly as "prickly-pears," or just "pears." The most common species of these in Australia is Opuntia inermis. This is a relatively spineless species found in this country along the Texas coast from Galveston to Corpus Christi. It also occurs along the Gulf coast of Florida and has been reported from the islands off the coast of Mississippi and Louisiana. It is one of the most upright prickly-pears and in the crowded growth in Australia reaches a height of five or six feet. The fruit is purple and of fine flavor and is highly relished by livestock.

The second pest of importance is called Opuntia stricta. This species is given as a synonym of O. inermis by Britton and Rose in their monograph on Cactaceae but the Australians apply this name to a spiny species with somewhat narrower joints than O. inermis. Its origin is unknown and it has not been found anywhere in America so far.

Other pests of lesser importance are Opuntia streptacantha, O. imbricata, O. tomentosa, O. nigricans, O. aurantiaca and O. monacantha. O. streptacantha is a Mexican species, where it is known as "cardona," and often forms large "forests" of plants as high as fifteen to twenty feet in the Central Plateau region of Mexico. O. imbricata also occurs in the Central Plateau region of Mexico and extends northward into the state of Colorado in the United States. It is known as the "devil's rope cactus" in the United States. O. tomentosa is native to the region near Mexico City. O. nigricans is a tropical species, often cultivated. O. aurantiaca, the "tiger pear," is native to Argentina and Uruguay, and because of its readily detached joints is viewed with alarm by Australian scientists who are making every effort to eradicate it. O. monacantha is also a South American species that may be found along the Coasts of Brazil and Uruguay and in Argentina.

As early as twenty to twenty-five years ago the spread of the cactus was alarming the Australians and efforts were made to check it. The first ideas were to utilize it and thus make it pay for its own eradication. All methods of utilization for any commercial product were failures. A frequent question in this country is, "Why didn't they use it to feed their livestock?" The growth of pear is so dense and the rate of spread per year is so great that it is estimated that all of the livestock in Australia could not eat up the annual increase. Besides, in feeding pear, it is necessary to add a concentrate feed for the pear itself has very little food value.

Chemical means of poisoning the pear were then studied and several chemicals were found effective in destroying the plants. Arsenic pentoxide is being used at present to keep down the spread. Fields and pastures are gone over periodically and the stray cactus plants that have

Insect Cages

come up are poisoned. But this method was impracticable in the huge impenetrable areas of cactus that had already grown up. Other means must be found to eliminate this prolific source of new infestation. Eradication by machinery or other artificial means was too expensive and cost several times the value of the cleared land.

Hence, the only relief seemed to be by natural control. A Travelling Commission, sent in 1912-13 to various countries of the world where cactus is native, found that cactus was controlled by natural enemies in its native habitat and never became the pest that it was in Australia. Numbers of insects and diseases had adapted themselves to a cactus diet in these countries and were holding it pretty well in check. Records of the host plants of these insects and diseases were also studied and many of them were found to be recorded only from cactus. There seemed to be a strong possibility of some of them at least being restricted entirely to cactus in their diet. Accordingly, the Travelling Commission recommended the study of these insects and diseases with a view to their introduction to feed on Australian cactus if they proved to be restricted in their diet to cactus. The World War intervened at this time and prevented further action by the government until about 1920.

In the winter of 1920-21, studies were begun in Florida and Texas on the insects and diseases attacking the cactus in those regions. These studies have continued ever since with headquarters at Uvalde, Texas. Studies have also been made in the states of Florida, New Mexico, Arizona, California, Colorado, Utah, Wyoming, Nebraska, and Kansas. The greater part of the Republic of Mexico has been visited as well as the West Indies, Guatemala, Salvador, Honduras, Venezuela, Brazil, Uruguay, Argentina, Peru, and Ecuador. Shipments of insects have been largely from the United States, although some shipments have been made from Mexico and Argentina.

Over three hundred species of insects have been recorded from cactus but, of course, not all of these cause serious injury to the plant. Australian investigators have found about 75 species in the United States, Mexico, and Argentina that seemed worthy of studies with a view to their possible introduction. Some of these have been discarded after finding that they would eat other plants than cactus. Many of the species found in these investigations were new to science and more new ones are being discovered annually.

Several types of insects are represented in these species that have been studied and a combination of all of them will be found to attack every part of the cactus plant. Included in these are the moth-borers (Melitara spp., Cactobrosis spp., Olyca spp., Cactoblastis spp., etc.) which eat the interior of the Opuntia joints, the beetle-borers (Moneilema spp., Cactophagus spp., Coenopaeus sp., etc.) that destroy the heavy stems and roots, the cochineals (Dactylopius spp.) that suck the juices from the plants, the "stink-bugs" (Chelinidea spp.), Hesperolabops (Stylopidea spp.) that suck the juices and help to establish diseases, the fruit insects (Ozamia spp., Noctuelia sp., and Narnia spp.), the seed-midge (Asphondylia opuntiae) that prevents the development of seeds, and then there are numberless insects of minor importance that attack the flowers and sometimes cause a little damage.

The question is often asked in this country, as well as Australia, "After you have found these insects and they are transported to Australia and eat up the cactus, what crops are they going to attack?" This is studied carefully and tests carried out before ever liberating the insect in Australia. Whether the insects will in time change their habits of feeding cannot be absolutely determined by tests but, so far as is possible to determine by feeding tests, we are sure that at the time of liberation the insects are absolutely restricted to cactus in their feeding habits. These tests are carefully carried out and in no instance where the insect is found to subsist on any plant other than cactus are they liberated in Australia.

Another question often asked is, "How do you keep the bugs alive until they get to Australia?" They are packed in specially constructed plant boxes with sufficient cactus to keep them in food for at least six weeks. The boxes are carefully put together and provided with ventilation, using a

sixty-mesh brass gauze to keep the insects from escaping or others from entering enroute. These boxes hold on the average about 200 pounds of cactus and will weigh from 250 to 300 pounds in all. They are shipped the quickest route possible and usually reach their destination about five

Wardian Case with Glass Removed

weeks after they are packed in the United States or Mexico. A shipment from Argentina takes three to four weeks longer, however. These shipments are kept in quarantine insectaries in Australia until all extraneous insects and parasites are eliminated. They are supposed to be shipped clean but in packing in the midst of the large cactus areas in this country it is very difficult to be absolutely sure that no extraneous insects are included in the shipment.

Many difficulties are encountered in handling these insects in captivity. Some of them have had to be studied for several years before they could be bred in cages. As might be expected, diseases developed and killed out the insects by the wholesale when they were crowded in confinement. Even with the best methods of sanitation, a valuable stock of insects may suddenly contract one of these diseases and be wiped completely out. Sometimes there is sufficient time to replace them during the current season but often they cannot be replaced until the following year. Sometimes a nice stock of insects are located not far from a shipping point where they may be collected in large numbers with a minimum of labor, while at other times they may have to be hauled forty to fifty miles to the nearest railroad for shipment. Often a particularly convenient supply of insects is found to have become the center of a real-estate development the following season.

Diseases play an important part in the checking of cactus growth in this country and wherever it is native. The shot-hole disease, or anthracnose (Gloesporium lunatum), of cactus is very common throughout the southwestern part of the United States and is particularly noticeable in the late winter and early spring. It causes black areas which later turn gray and often causes very serious destruction to the prickly-pear cacti. It has often been noted to follow the attack of insects, particularly the "stink-bugs" (Chelinidea spp.). Other diseases are "sun scald" (Hendersonia opuntiae), "black-spot" disease (Perisporium wrightii), and several bacterial diseases that thrive in humid conditions.

So little was known when the present work was begun, and so many difficult problems have had to be worked out, with many more to be worked out that it is difficult to predict any results. Assisting nature by transplanting insects already adapted to cactus as a host plant has rid Australia of considerable pear infestation but there are many millions of acres yet to control and many things could happen to these insects before they can manage to check the prickly-pear plague. The experiment of eradicating prickly pear by the means of insects is being watched with interest by scientists in other parts of the world and, should it prove successful, there is no doubt that other work of this nature will be attempted.

CACTUS DWELLERS

Continued from page 2

er, Road Runner, House Finch, Western Mourning Dove, Western Mockingbird and others. In Arizona the giant cactus, Carnegiea gigantea, serves as veritable tenements for bird residents. There in one medium sized giant, one hot afternoon in late spring, we located nests of the Swainson Hawk, Elf Owl, Red-shafted Flicker, Gila Woodpecker, and Ash-throated Flycatcher. As we were examining the residents of this saguaro a Cactus Wren scolded continually from a group of cholla close by, the same as the one we met with on the Mohave several months before.

Wright M. Pierce is professor of ornithology at Pomona College, Claremont, Calif., and an enthusiastic collector of cactus and succulent plants for 10 years. Cuts by courtesy of Cooper Ornithological Club.—Editor.

CLARK GARDENS

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AND

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PASADENA, CALIFORNIA

FROM SANTA BARBARA

We should be proud indeed of our "Cactus Journal"—this is high class matter; the illustrations illuminating, and as most of us are seeking more light, let it shine in as many rays and places as we can find.

A few comments seem called for as they appear in this initial issue, and we venture these not without fear and trembling. Let us have as many as possible of the photos of Euphorbias, for all the genera we have studied, this is the hardest, and importation direct from Africa seems only to contradict, while Berger is hopeless as we have already twelve authentic corrections to his work, and more in progress.

No mention seems to be made of "Semesan" as an active agent in preventing decay. This is the greatest styptic found after 50 years of search. We keep a large pan of beach sand and Semesan on tap all the time, and plunge the base of all cutting in this *till they root*. It is invaluable also to check decay in bad spots, and if we plant a Cereus cutting out before rooting, some of the above mixture is placed at the base of the cutting, there is no risk, and we find the reaction is that of a stimulant to growth. The regular propagating beds are watered with Semesan in solution if we suspect any fungus present. Directions are sent with each can.

We have the manure and soil of a spent hotbed in the lath-house, and it is amazing how the different genera of succulents root in it, the pile is usually covered with Sempervivums, Echeverias, Kleinias, Cotyledons and similar subjects.

Am wondering which is the proper word to use, we find in the Journal cristate and crestate, and, assuming one is not talking or writing the *latinized name, which is right.**

The interesting story of the bearding of Lophocereus schottii in its den, reminds us of the travelers' tales that used to come in with the discovery of a new species of Orchid. It would *seem that after the arduous trip, a great haul* should be made of both plants and seeds. Our one specimen flowered quite recently, was pollinised by hand, and has already ripened two fat fruits containing perfectly good seeds. These are sown. *Baby plants should be very attractive as* indeed are all the seedling Cereus.

Perhaps the most often asked question is, how much water must we give our plants. The reply is, we give all that are in the open ground as much or more than Cabbage. And, how they do drink.

Some fifty packets of very rare seeds have arrived in the past weeks, part from Australia and others from South Africa. Perhaps a word as to sowing seeds as we do it, may interest. The Peat-moss known as GPM is used with a very little sand—boxes are preferred—as there is less evaporation. This bed is made level, well watered, let stand for a day, then sow the seeds *on the peat,* covering in some cases where the seeds are small, with the least sprinkling of sand. The larger ones as the Asclepiads with more depth. We have germination of at least fifty per cent in a week at this season when warm. Cover the box or pan with a sheet of glass, reversing this as often as moisture collects on the under side which will be each morning. More water should not be needed until after germination is well along or visible. The peat-moss is free from weeds and fungus, we never have damping off except by infection, so great care is taken to have *clean* receptacles, preferably sterile. It is great fun raising Echeverias this way, and how they do vary.

In Mr. Merkel's note: "When you see a plant stand still, looking sickly with no signs of growth it is nearly always because the soil is exhausted." A warning note should at this time be given that we have an insidious enemy the Nematode, that is becoming quite too common in collections, infesting the roots killing every live portion, and, worst of all infesting the soil and for this, there seems no remedy, except sterilization. We have had valuable Echeverias as large as Cabbages stand still, these could be beheaded and rooted over again, but we find also the *Nemas on the roots of Euphorbias, and the only* treatment is a radical one. Semesan in solution, and a good soaking for days of the base of the plants seems to help.

E. O. ORPET,
Santa Barbara

*Crestate is never correct. Crested is English. Cristate botanical English. The error occurred in a caption under an illustration which escaped proofreading. Evidently Mr. Orpet read the first issue very *thoroughly and his interest is appreciated.*

A. D. H.

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Gentlemen:

In sending my subscription I believe a few words would be of interest to you because I am so enthused over the limitless possibilities of cactus, etc. (excuse it . . . cacti).

For seven years I've been in tuberculosis sanitariums and was at home a long time before that. This Spring was the first time I could spare the strength to start my "Friendship Garden." So far I only have ten cacti and succulents, but I'm on my way," and of all the pleasure watching them grow, and wondering what they are.

A big beauty is the "Turk's Cap"—I feel sure, the others I'm not sure of. All will be in painted pots here near my bed so I can guard them. Everyone is so interested too and of all the arguments. . . .

Where does one get the "Cactaceae," Britton and Rose, and how much is it? The library sent me a sample copy of the Journal. That's how I heard of you. Please send me the July No. 1. I want to start from the beginning. I'll enjoy every word in each one.

Truly yours,

GRACE V. FREELAND.

Care Stony Brook Retreat, Keene, Calif.

Readers, here is a cactus enthusiast with 10 species on her window at her bed in Stony Brook Sanitarium, unable to get out and collect additional plants, but wishing more. "Do your duty." —Ed.

EUPHORBIAS

Continued from page 10

coerulescens, all African plants, furnish the Ethiopians with a mortal poison for their warriors' arrows; while E. cotinifolia serves the like purpose for the Brazilian Indians. E. hibernica is extensively used for the purpose of stupifying fish by the peasantry of Kerry, Ireland; and so powerful are its properties that a small basketful of the bruised Euphorbia will suffice to stupify the fish for several miles.

The Journal does not guarantee the above medicinal properties. We didn't know Mr. Frick was a doctor as well as a collector of Euphorbias! This is really a snake story! —Editor.

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